# University of Oklahoma Research Institute

THE PSYCHOLOGICAL EFFECTS OF NON-NUCLEAR WEAPONS:
A BIBLIOGRAPHY WITH SELECTED ABSTRACTS
Volume I (Unclassified)

By

Monte Page, Clinton Goff and J. D. Palmer

Contract AF 08(635)-3693
Report 1419-4

August, 1964

## Technical Report

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TABLE OF CONTENTS

# THE PSYCHOLOGICAL EFFECTS OF NON-NUCLEAR WEAPONS: A BIBLIOGRAPHY WITH SELECTED ABSTRACTS

## INTRODUCTION

The bibliography contained in this volume was developed under Air Force Contract AF 08(635)-3693 as a part of an investigation of "The Psychological Effects of Non-Nuclear Weapons for Limited War." This report is an interim technical report to allow the major findings of background material to be presented to interested persons. The problems under direct concern of this program include: (1) the determination of relevant parameters of weapons effects and their relationship to the psychological effectiveness of conventional weapon systems. (This necessitated a thorough search of pertinent literature in the area); (2) the development of an adaptive systems model to simulate social systems under attack; (3) the development of a Psychological Index designed to measure the psychological effectiveness of various weapons and weapon systems for limited warfare.

A thorough search of several libraries has been made and a collection and analysis of data dating from World War II to the present time has been undertaken. The bibliography contained in this volume represents only a fraction of the material covered in the study program. For a particular article to be included it was judged to have a substantial degree of pertinency for the program under consideration. Thus, this

bibliography is selective rather than exhaustive. It is thought that the material included in this volume and in the second volume which is classified constitutes the most important source material relevant to the study topic.

The libraries searched under the above research program included the following, and items listed are available at one or more of these locations:

U. S. Army Command and General Staff College Library, Ft. Leavenworth, Kansas

Air University Library, Maxwell Air Force Base, Alabama

Defense Documentation Center, Alexandria, Virginia

National Archives, World War II Records Division, Washington, D. C.

University of Oklahoma Library, Norman, Oklahoma

University of Oklahoma Medical School Library, Oklahoma City, Oklahoma

The main body of literature on the Psychological Effects of Weapons Systems is of the anecdotal, journalistic and questionnaire survey type. This material is included in Section I. The criterion established for generating an abstract was made on the following: (1) Importance of the document, (2) Time of availability of the document, i.e., certain documents were received on a two week loan basis, they were read and then abstracted if the material appeared pertinent. The abstracts made by members of the research staff are intended to indicate to the reader the nature of the material contained in the original document. They are not complete summaries of the major contents of the original documents. Items included in the bibliography without an abstract are in general of less value for the study of psychological effects of weapons than those which were

abstracted. However, there are some notable exceptions to this rule. Certain of these unabstracted references arrived after the abstracting phase had been completed. Code numbers of items of high relevancy in this section are preceded by an asterisk (*).

Section II of this bibliography includes listings of the literature pertinent to the development of an adaptive systems model to simulate social system response to the various weapons, and to aid in the development of the Psychological Index. This portion of the program is an attempt to develop an adaptive systems model for computer simulation for the psychological effects of attack. It is intended that this model will permit the definition of various conditions under which the psychological effects of various weapons systems could be maximized.

As an outgrowth of this literature search, the University of Oklahoma is engaged in an experimental research effort. Section III contains a bibliography of experimental literature on psychological effects that have possible relevance to combat related stress. This experimental effort is a direct result of the investigation of the literature. Based on the observational and questionnaire survey literature coming out of World War II and Korea, certain variables are being investigated experimentally. In the course of this research a bibliography of psychological experimental literature has been accumulated. Most of this literature is not directly concerned with psychological effects of weapons. Experimental literature bearing directly on this topic is all but nonexistent. There is a good deal of experimental literature on psychological effects of stress, panic, expectancy, etc., which bears directly on the development of experiments designed to test variables relevant to

psychological effects of weapons. This section should not be considered an overall bibliography since those studies included have been limited to those relevant to the present experimental effort at the University of Oklahoma.

J. D. Palmer, Ph.D.
Principal Investigator

# ABSTRACTS FOR ANECDOTAL, JOURNALISTIC

# AND QUESTIONNAIRE SURVEY LITERATURE

AUTHOR: Atkin, I. CODE: 1.1

TITLE: Air Raid Strain in Mental Hospital Admissions

SOURCE: Lancet, Vol. 2, 1941

## ABSTRACT

This analysis of 300 admissions (131 male, 169 female), from September 1940 to April 1941, to a mental hospital was made to determine whether air raids were the only cause of mental illness or a contributary cause. The conclusions were that in about 15% were air raids given as a causative factor but only 13% as a major influence and 2% contributary.

AUTHOR: Baker, G. W. and Chapman, D. W. (Eds.) CODE: 1.2

TITLE: Man and Society in Disaster

SOURCE: New York, Basic Book, Inc., 1962

## ABSTRACT

This book represents about 10 years research in the disaster area, done by the Disaster Research Group, National Academy of Sciences - National Research Council. (Formerly: Committee on Disaster Studies 1952-1957.)

Disaster time sequence may be divided into seven phases. (1) Warning (2) Threat (3) Impact (4) Inventory (5) Rescue (6) Remedy (7) Recovery. These periods have generally been found to evoke typical behaviors.

Methodology presents a problem in disaster research because of the lack of time for careful investigation of the particular situation prior to data collection. The time and place of a disaster cannot usually be predicted. There is also the problem of adequate controls and measures. Sampling is difficult. The personal interview has been the main research tool.

The lowest level of disaster research is the descriptive. This provides a wedge into the area. At present disaster research is well along in the analytic stage of research, where relationships are reported between disaster behavior and other characteristics of the individual, the community or the situation. The next step in disaster research is explanatory studies which attempt to make overall sense out of the relationships observed at the analytic level. This last stage is in a few instances being achieved.

AUTHOR: Billings, Chalke, and Shortt CODE: 1.3

TITLE: Battle Exhaustion - A Follow-Up Study

SOURCE: Canadian Medical Association Journal, Vol. 57, 1947

## ABSTRACT

This study was undertaken to explain the natural history of unresolved battle neurosis or its later effects. A total of 65 cases were included in this study, of which 55 were located 5 - 6 months after discharge by the district psychiatric social service officer and reported on. This study divides them in three main categories: (1) improved, (2) unchanged, and (3) aggravated condition.

The findings seem to bear out the impression that psychiatric disturbances precipitated by the severe mental trauma of warfare are not entirely benign, and that physical and mental symptoms persist into civilian life.

No corrlation was found between the degree of clinical improvement and the type of breakdown, nature of symptoms, previous stability, or early treatment.

AUTHOR: Davis, Stanley W. CODE: 1.4

TITLE: Stress in Combat

SOURCE: Sci. Amer., 1956

ABSTRACT

Physiological measures showed differences in men in an attacking company, a defending company, and a control group, with data gathered under combat conditions in Korea.

The first two groups showed physiological stress recovery which required several days. Psychological test were also made but without significant results due in large measure to impossibility of controlling test conditions.

AUTHOR: Davis, S. W. and Tayllor, J. G. CODE: 1.5

TITLE: Stress in Infantry Combat

SOURCE: The Johns Hopkins University, Operations Research Office, ORO-T-295, 1954.

## ABSTRACT

One of several reports on the same experiment conducted in 1952 on combat soldiers in Korea. Three groups were used: (1) attacking company, (2) defending company, (3) control group 200 yards behind the lines. There were 12 psychological measures used and 27 physiological.

The emphasis of the report is on the physiological results as they were the only ones that showed significant differences. Inconclusive psychological results were obtained. This was judged as due mostly to inadequate controls and measuring devices, as behavioral differences were observed by the investigators.

Note: See abstract of "Stress in Combat," Scientific American, 1956, and "A Study of Combat Stress, Korea 1952," ORO-T-41(FEC).

AUTHOR: Dollard, John CODE: 1.6

TITLE: Fear in Battle

SOURCE: Institute of Human Relations, Yale University, New Haven, 1943

## ABSTRACT

This report presents the results of an extensive questionnaire administered to 300 combat veterans, all who fought in the Spanish Civil War. The results are presented in percentage bar graphs.
Example Question: "Did you experience fear when going into your first action?" 74% of the men answered "yes", 26% "no". Conclusion: Fear is normal - only a few men were unafraid, and many continued to experience fear when going into subsequent actions. In response to the question of when they were most afraid before, during, or after the action, 71% responded before, 15% during, and 14% after. Questions asked on symptoms of fear in battle, fear of wounds, most-feared weapons.

Part II - Deals with changes in fear. Some battle fears change with experience, others do not.

Part III - Techniques of fear control. Fear should be discussed - before battle. During battle fear should be suppressed - fear can be contagious. Concentration on the task during a battle counteracts fear. 70% say a chronic deserter should be shot.

Part IV - Fear and Morale - Fear, fused with hunger and fatigue, tends to drive men out of battle. Other stronger forces must be pitted against fear to drive men in. The net balance is morale.

Part V - Facts about the Report. Discusses reliability and validity.

AUTHOR: Foreman, Paul CODE: 1.7

TITLE: Panic Theory

SOURCE: Sociology and Social Research,
Vol. 37, 1952-53.


## ABSTRACT

The author gives three ideas of panic which were current when the article was written. One of these is the economic interpretation and the other two appear in the sociological and social-psychological literature.

One problem found in the review of panic incidents has been the need for distinguishing between antecedent and predisposing conditions on one hand and cause on the other.

Several statements concerned with control of panic are listed.

AUTHOR: George, Alexander L. CODE: 1.8

TITLE: Human Factors in Air-to-Ground Interdiction Operations in the Korean War

SOURCE: The Rand Corporation, RM-659, 1951

## ABSTRACT

Enemy concern and anxiety over the possibility of air raids during night marches can be increased by dropping more flares, flying planes lower, and using unusual psychological gadgets such as noisemakers. Psychological warfare might also help by spreading among enemy troops news of the disastrous bombing experiences of other enemy units; for this means, rumor planting covertly might be more effective, than official United Nations propaganda media.

Fear of flares could be increased by adopting the policy of occasionally making a brief strafing run or dropping a small bomb even when the pilot has not detected enemy troops. This would counter the tendency for fear of flares to wear off after experiencing repeated cases of non-detection.

Special flares might be developed which explode several times while burning or which "whistle" to the ground and explode after burning.

In daytime camp-site attacks, the problem of locating the target more precisely is of over-riding importance and overshadows the question of accurate delivery of ordnance. The enemy is more vulnerable to detection and effective air attack during the daytime.

AUTHOR: Glass, Albert CODE: 1.9

TITLE: Psychologic Considerations in Atomic Warfare

SOURCE: U. S. Armed Forces Medical Journal, Vol. VII, May, 1956, No. 5.

## ABSTRACT

This article is based on the assumption that in future combat military medicine must be prepared to care for mass casualties of a magnitude and abruptness far exceeding any previous experiences in conventional warfare. Experiences with behavior under conditions of combat aerial bombardment, civil disaster, and Heroshima and Nagasaki are used as a guide to considerations. Panic, emotional breakdown, and fear reactions are considered.

Assumptions and recommendations regarding psychologic problems are:

(1) Common abnormalities are states of temporary mental disruption and increased apprehensiveness.

(2) Major determinants of behavior include the intensity and duration of the agent, training and preparation, efficiency of communication, leadership, and group unity.

(3) Prevention of psychologic disorders a responsibility of command. Medical officer is in a staff advisory capacity.

(4) Effective treatment should be based on decentralized operation, expectancy for recovery, and brief simplified methods.

(5) Treatment should begin at first medical facility to receive them. Battalion surgeons must double as front line psychiatrists.

AUTHOR: Glover, E. CODE: 1.10

TITLE: Notes on the Psychological Effects of War Conditions on the Civilian Population

SOURCE: International Journal of Psychoanalysis, Vol. 23, 1942

## ABSTRACT

Results of a questionnaire circulated among members of British Psycho-Analysis Society. Findings were scattered, not sufficiently extensive to reach definitive conclusions.

AUTHOR: Glover, E. CODE: 1.11

TITLE: Notes on the Psychological Effects of War Conditions on the Civilian Population III the "Blitz"

SOURCE: Int. J. Psycho-Anal., 1942

## ABSTRACT

The author discusses in detail such factors as blitz conditions, environmental settings, raid-shock, post-raid conditions, and follows this with detailed clinical accounts. Principle conclusions: the original fears of mass neurosis were unfounded and a no-neurosis myth is in process of formation. The actual traumatic factors most frequently observed were direct hits and injuries or severe bombing over a prolonged period, or in mild cases, severe blast followed by physical injury.

AUTHOR: Goss, Hilton P. CODE: 1.12

TITLE: Civilian Morale Under Aerial Bombardment 1914-1939

SOURCE: Maxwell AFB, Alabama, Air University Libraries, Documentary Research Division, Dec. 1948

## ABSTRACT

The evolution of aerial bombing during the period 1914-1939 is covered in this work. Included are an explanation of the circumstances under which bombing raids occurred and an attempt to review the reactions of the civilian populations to this type of warfare. Coverage is given to (1) The Air War Against Civilians, 1914-1918, (2) Air Warfare in the Gran Chaco and Abyssinia, (3) War in the Far East, 1931-1940, and (4) The Spanish Civil War, 1936-1939. Eye witness accounts by observers and local inhabitants are quoted. Frequent terms and phrases are shock, hysteria, panic, will to resist, hate, disruption of civilian pursuits, world opinion, morale, reprisals, and hardened population. Most of the published comments were made by "military men, correspondents, literary figures, and political notables. There is not nearly enough by psychologists, social analysts, and medical authorities."

Two general observations made about the Spanish Civil War are:

"Human mind and human character could absorb an amazing amount of physical punishment without giving way under the impact. If the lines between defiance and fear, between anger and panic were often indistinct, the wonder is that they were discernable at all."

"The psychological implications of such warfare (Aerial bombardment, 1939) still had not been clarified to a point where anyone could safely say that mass bombardment of civilians would either stiffen or break the will to resist."

Contains an excellent bibliography though dated, and generally shows the need for studies in the psychological effects area.

AUTHOR: Hanson, Frederick R. CODE: 1.13

TITLE: The Factor of Fatigue in the Neuroses of Combat

SOURCE: Bulletin of U. S. Army Medical Department, Vol. 9, 1949.

## ABSTRACT

A discussion of the relationship between physical strain and combat neurosis. The analysis of action in North Africa, Sicily, Italy, and southern France indicates that physical fatigue, by itself, did not produce psychiatric casualties. It was apparent that there must be a combination of emotional stress and physical fatigue to cause this type of casualty. The resistance to emotional stress varies quantitatively with the degree of physical fatigue and is reversible.

AUTHOR: Harris, Arthur CODE: 1.14

TITLE: Psychiatric Reactions of Civilians in War-Time

SOURCE: The Lancet, Vol. 2, 1941

## ABSTRACT

Experiences in an observation ward near a refugee-reception center and in a heavily bombed district are reported. The cases include diagnosis of: senile dementia, depression, mania, psychoneurosis, schizophrenia, exhaustion and confusion.

The author states that war conditions may appear to have some etiological significance in a wide variety of reactions, although depression and anxiety are the commonest disturbances produced by frightening and distressing events.

In only 23 of 435 total admissions observed were air-raids believed to be among the chief causes. However the statement that "since no general increase in psychosis occurs in war-time the stresses of warfare cannot be etiologically important in that group of diseases" is fallacious. Rather there is a tendency for the socially unfit to gravitate towards institutions in war-time.

AUTHOR: Headquarters Army Ground Forces CODE: 1.15

TITLE: Extracts From Overseas Reports

SOURCE: Army War College Dissemination Division,
G-2 Section, Washington 25, D. C., 1944

## ABSTRACT

This report contains extracts from "overseas reports", which were interviews of combat enlisted men. Sounds of unfamiliar enemy weapons were frightening to troops. The machine pistol and "screaming meemies" were most frightening to new troops. Another man reported that the German mortar and the German 88 was most frightening at Anzio. Heavy fire makes new troops bunch together, and thus present better targets. If sufficient number of these "overseas reports" can be obtained, they might provide useful data.

AUTHOR: Headquarters Army Ground Forces CODE: 1.16

TITLE: Study of AGF Battle Casualties

SOURCE: Washington, D. C.: Plans Section, 1946

## ABSTRACT

Contains a section on neuropsychiatric casualties. "The infantry soldier will eventually wear out in combat." This depends on a number of factors.

In a section called "The Wounded and the Dead" a table presents "The precentage of those who, being struck by a particular weapon, died." The machine gun is most lethal, approximately 50% of "hits" are fatal. The figure for artillery is only around 20%, and mortar even less. However, there are actually more total fatal casualties from fragmentation weapons because there are more "hits". Possibly the probability of being killed if hit by a weapon can be related to the psychological effect of that weapon.

AUTHOR: Human Resources Research Institute CODE: 1.17

TITLE: The Social Effects of Bombing

SOURCE: Maxwell AFB, Alabama: Air Research and Development Command, 1953

## ABSTRACT

This study is intended to present an overall treatment of the social effects of bombing from a "socio-demographic" point of view. Housing destruction, and its relationship to the various socio-demographic components of an urban complex, is the case around which the work is centered. The most important aspect of bombing of urban populations is the effect upon essential production. The decrement in production is the result of two components: (1) Physical destruction of plants and machinery, and (2) The social effects on industrial manpower. The second component is the primary concern of this study. The study of individual psychological reactions to bombing and of economic problems caused by bombing are not the primary concern either. The focus is on the repercussions of bombing destruction upon urban society and the national economy during the months and years following a disaster.

A key concept is that of "elasticity," i.e. housing can be destroyed to say 50% and yet 80% of the population still remain in the city. The food supply is much less "elastic" than housing. Also the number of persons remaining in a city is no index of the number of industrial workers remaining because non-workers leave first.

The report contains numerous correlations and percentage tables comparing various demographic factors. The data is taken from the USSBS Reports and many other sources.

AUTHOR: Ikle, Fred Charles CODE: 1.18

TITLE: Social Impact of Bomb Destruction

SOURCE: University of Oklahoma Press, 1958

ABSTRACT

A work on the social consequences of various kinds of urban destruction by actual bombing, using data taken largely from World War II records for Germany, Japan, and Great Britain. Data obtained following other disasters are also used.

Ikle says: "No other aspect of an air raid causes as severe an emotional disturbance as the actual witnessing of death and agony."
Hypothesis: After physical destruction exceeds a certain percentage of the city's total resources, further increase in destruction will result in a disproportionately greater increase in social effects. This applies not only to cities, but also to regions and countries.
Observations: People behave in totally different ways before and after they have experienced bomb destruction and/or evacuation. The importance of panic is often overemphasized in literature. Conventional bombing leaves many more homeless than the number it kills.

This book is concerned primarily with problems of the nuclear bomb but it cites and discusses many conventional bombing situations of World War II.

AUTHOR: Janis, Irving L. CODE: 1.19

TITLE: Air War and Emotional Stress

SOURCE: New York: McGraw-Hill Book Company,Inc., The RAND Series, 1951

## ABSTRACT

This book is the final form of the RAND Corp. research on psychological effects of air war. The major contents are earlier reported by Janis in RM-93 and RM-94.

Part I. Deals with the emotional impact of the A Bomb in Japan. As such it is outside of the scope of "The psychological effect of non-nuclear weapons."

Part II. "Effects of Air War," deals with conventional air war. An abstract of this material has been made under the title "The Psychological Impact of Air Attacks" RM-93.

Part III. "Psychological Aspects of Civilian Defense," is directed at civil defense in the event of atomic war. However, analogy is made from past experience with conventional weapons. Chapter headings are: Problems of Disaster Control, Training and Emotional Inoculation, Education for Survival, Apprehensiveness Among the Urban Population. This material is also found in RM-94 "Psychological Aspects of Vulnerability to Atomic Bomb Attacks."

Bibliography

AUTHOR: Janis, Irving L. CODE: 1.20

TITLE: The Psychological Impact of Air Attacks: A Survey and Analysis of Observation on Civilian Reactions During World War II

SOURCE: The RAND Corporation, RM-93, 1949

## ABSTRACT

This paper is an earlier draft of Part II of the book, Air War and Emotional Stress, published by the same author in 1951.

The stated aim of the report was to - "piece together the disparate observational material in order to arrive at a set of empirical generalizations representing the core of our existing knowledge about the effects of situational factors and the role that such factors play in producing various types of air raid reactions." Chapter headings are: (1) Psychological Disorders, (2) Factors Affecting Emotional Reactions, and (3) Factors Affecting Wartime Morale.

There is only a very slight increase of the more or less long term psychological disorders such as psychoses and chronic neurosis and this primarily among predisposed persons. With increased severity of attack there is increased incidence of "emotional shock" which is usually recovered from within hours or a few days. There is also a slight increase in psychosomatic disorders such as ulcers.

Fear reactions are affected by (1) the magnitude of the air attack (2) the "near-miss" factor (3) emotional adaptation to air raids among the "remote-miss" population. Several kinds of adjustment mechanisms are discussed. They are (1) curiosity about bomb damage (2) discrimination of danger cues during the raids (3) increased communicativeness (4) fatalistic attitudes (5) increased religious interest (6) superstitious avoidances and rituals.

In World War II bombed populations directed some aggression toward home authorities rather than the enemy, however, such activities as sabotage rarely occurred. Morale deteriorated with increased bomb volume, but this was not a directly proportional relationship. 60 item bibliography.

AUTHOR: Kahn, Lessing A. CODE: 1.21

TITLE: A Discussion of Some Causes of Operational Fatigue in the Army Air Forces

SOURCE: Psychology Bulletin, 1947

## ABSTRACT

An attempt is made to clarify some of the agents which influence operational fatigue. The writer discusses definitions and symptoms. Among the causes reviewed are physical agents, geographic and climatic conditions, and emotional stress.

AUTHOR: Kahn, Lessing A. CODE: 1.22

TITLE: A Preliminary Investigation of Chinese and North Korean Soldier - Reactions to UN Weapons in the Korean War

SOURCE: The Johns Hopkins University, Operations Research Office, ORO-T-14(FEC), February 1, 1952


## ABSTRACT

This work was concerned directly with psychological effects of weapons and with eventual development of psy-weapons. Interviews with POW's provided the source of data. The classes of Korean-era weapons studied were: (1) air, (2) artillery, (3) mortar, (4) Tank, (5) Infantry, (6) Naval Bombardment, and (7) Bazooka.

Reasons given for fearing a weapon class: (1) casualties, (2) noise, (3) efficiency of action, (4) restriction of activities or operations, (5) invulnerability, (6) delayed effects, (7) miscellaneous effects (property damage, morale breakdown, etc.)

Kinds of air weapons studied for fear responses were: (1) machine gun, (2) high explosive, (3) white phosphorus, (4) napalm, and (5) rockets.

AUTHOR: Kahn, Lessing A. CODE: 1.23

TITLE: A Study of Ineffective Soldier Performance Under Fire in Korea, 1951

SOURCE: The Johns Hopkins University, Operations Research Office, ORO-T-62, Oct. 1954

## ABSTRACT

This paper is one of a series of reports on the psychological effects of weapons, using questionnaires taken from prisoners of war as data. The purpose was to study the general problem of psychological effects of weapons on enemy soldiers, and specifically to discover the relation between the performance of soldiers in Korea and their exposure to fire from different types of UN weapons. Some consideration is also given to the performance of U. S. soldiers under effective enemy fire.

Of the UN weapons studied, artillery, bombs, napalm, and air strafing were outstanding in producing psychological effects.

Mortars and automatic infantry weapons were judged the most effective enemy weapons against U. S. soldiers.

AUTHOR: Klier, Sol, and Linskey and others CODE: 1.24

TITLE: Selected Abstracts from the Literature on Stress

SOURCE: New York V., Coll of Eng., New York: Report on Contract N61 339-565, 1960

## ABSTRACT

This report is the result of a comprehensive literature search for information on stress pertinent to a training program. It provides a source of background information from which specific hypotheses and variables will be delineated for study in a research program aimed at the introduction of stress in training devices and training programs. From the literature on stress and anxiety 397 articles were selected and abstracted. In general, selection was made on the basis of the relevance of the study for determining and/or measuring the effects of stress or anxiety on human behavior. Such topics as the following are included: effects of imposed stress, effects of manifest anxiety observations of behavior under extreme stress (combat) theoretical concepulizations of stress, personality attributes of stress, psyiological effects of stress, and techniques for determining the presence of a stressful effect.

AUTHOR: Knox, S. C. CODE: 1.25

TITLE: Neuropsychiatric Combat Casualties

SOURCE: Hosptial Corp. Quarterly, Washington, Vol. 18, No. 7, 1945

## ABSTRACT

An understanding and appreciation of a few broad principles will greatly assist in the care and rehabilitation of nervous casualties under combat conditions. These principles include a knowledge of the ordinary causes of nervous disorders, a recognition of the common signs and symptoms of such condition, and a comprehension of the methods and aims involved in their treatment.

Included is a discussion of handicaps in combat, management of fear, symptoms, preventive measures, and therapy. This article is based on World War II experiences.

AUTHOR: Larsen, Otto N. CODE: 1.26

TITLE: Rumors in a Disaster

SOURCE: Maxwell Air Force Base, Alabama, Human Resources Research Institute, Jan. 1954

## ABSTRACT

From observations on one disaster scene (forest fire threatening a town) a discussion of the development, function, and control of rumors, is presented in a framework suggesting problems and techniques for further study.

It was found that there were at least four different populations involved in various networks of communication. In the disaster area, one network involved the local men who stayed behind to fight the fire. Also in the disaster area were the outside helpers - volunteer fire fighters, reporters, and officials from nearby communities and from the state capital. Outside the disaster area, one group consisted of the evacuees, mostly women, children, and aged men. Another network involved the general public in nearby communities where contact with news about the disaster was through mass media reports as well as from rumors passed on from person to person.

The major current types of rumors may be classified as follows:

(1) Rumors about real or potential property damage and personal injury or loss of life.

(2) Rumors about the course of the catastrophe.

(3) Rumors about leadership. These rumors arose out of dissatisfaction with the lack of coordinated leadership and vagueness about who was "running the show".

(4) Rumors fixing blame.

Distortion in rumors seemed to grow as the distance from the scene of the disaster increased.

TITLE: Rumors in a Disaster

Postman and G. W. Allport noted that two essential conditions, ambiguity and importance, are related to rumor transmission in a roughly quantitative way. That is, "the amount of rumor in circulation will vary with the importance of the subject to the individuals concerned, times the ambiguity of evidence pertaining to the topic at issue."

Rumors function (1) to reduce or increase tensions, (2) to take away or restore control leaders, (3) to define or confuse a certain course of action, (4) to explain or magnify unusual and unstructured happenings, and (5) to integrate or disintegrate the process of social adjustment.

Compared to the oral delivery of information or instructions, printed leaflets might have a number of advantages as an instrument for rumor control. For example:

(1) A written leaflet is a permanent record that can be referred to again and again. It offers its own proof in passing on the message to those who have not heard it and it helps to eliminate distortions of word-of-mouth orders.

(2) It can pose an argument more completely than a spoken message. Loudspeaker instructions must necessarily be brief. Leaflet meassages could make fuller explanations.

(3) It can reinforce messages with pictures, diagrams, and maps.

(4) It appeals to a common habit - the reading habit. The written word has a much more authoritarian tone, for many people, than the spoken word.

How effectively printed matter could be employed in rumor control would depend in part on the nature, duration, and severity of the disaster, as well as the size and density of the population in the stricken area. Timing, too, would be important.

AUTHOR: Marsen, John J. CODE: 1.27

TITLE: Psychiatric Problems in Troops in Korea During and Following Combat

SOURCE: U. S. Armed Forces Medical Journal, Vol. 7, 1956

## ABSTRACT

The author states that fear is the dominant stimulus in producing emotional disabilities in combat. Increasing casualties, lengthening duration of combat activity, military reverses, lack of motivation, poor indoctrination, unrecognizable goals, and lack of confidence in weapons and leaders go together to dissolve "feelings of invulnerability" and subject a soldier to fear of various types.

The comparison, incidence and severity of psychiatric problems of troops in combat with troops in a state of combat readiness showed that the stresses of battle far outweighed the internal and external supports that the soldier could muster to counteract them. Psychiatric incidence, evacuation, and hospitalization rates were much higher in combat. Psychiatric incidence rates in divisions were approximately 25% higher during combat.

AUTHOR: Marshall, S. L. A. CODE: 1.28

TITLE: Commentary on Infantry Operations and Weapons Usage in Korea, Winter of 1950-51

SOURCE: Chevy Chase, Md.: Johns Hopkin University, Operations Research Office, 1951

## ABSTRACT

This 140 page narrative account of Infantry Operations and Weapons Usage in Korea makes for interesting reading but is of little value in the study of psychological effects of weapons. This was not its purpose. The report has 3 sections: (1) Operations, or the behavior of men in the use of weapons, i.e. more men are using their weapons in Korea than in the World Wars; (2) Weapons - use and usefulness, or the behavior of weapons as men use them, i.e. the soldier thinks the M1 is a good weapon, the BAR is the mainstay, and the carbine is worthless; (3) Communications and information, or the use of information in augmenting fighting power.

AUTHOR: Matte, Ignacio CODE: 1.29

TITLE: Observations of the English in War Time

SOURCE: Journal of Nervous and Mental Disease, Vol. 97, 1943

## ABSTRACT

The author, a psychiatrist, attempts to describe the reactions of the English civilians to the early air raids during the "Battle of Britain." He states that the uncertainty of England's participation in the war produced great anxiety in the English and afterwards, when the word came that England was at war, there followed a general feeling of relief. Shortly afterwards, though, then again arose the fear of air raids.

It was stated that as the civilians became accustomed to hearing the sirens, and not having these followed by actual air raids, somehow the prospect of the air raid became less frightening. Also, the gradual increase of bombing experienced by the civilian enabled them to make a progressive adaptation to the bombing. The counter-firing at the aggressor planes was psychological reassuring factor whether these measures proved at that time to be effective or not.

Some of the measures used to relieve anxiety during the air-raids were:

(1) Seeking the company of others rather than being alone.

(2) Activity, whether verbal or physical.

(3) The factor of criticism in keeping up the morale. The possibility of criticizing, both about big or small things, provides an outlet for aggression which makes for unity, provided the criticism can be led along certain lines.

AUTHOR: Meerloo, Joost A. M. CODE: 1.30

TITLE: Mental Danger, Stress and Fear

SOURCE: Journal of Nervous and Mental Disease,
Vol. 123, 1956

## ABSTRACT

The author states that a great difficulty that arises in an attempt to describe man's various reactions to danger lies in trying to define what danger is. Further, small dangers help to form man's personality, while big dangers overwhelm and destroy him. We know what various physical dangers do to the physical organism but it is more difficult to define what agents injure the mind. This is an article on the concept of danger and its relationships to fear and anxiety. The author uses a semantic and descriptive approach in attempting to bridge the various meanings included in the concepts of danger, stress and fear.

AUTHOR: Mills, Donald L. and Yale, Wesley W. CODE: 1.31

TITLE: An Exploratory Study of Human Reactions to Fragmentation Weapons

SOURCE: Menlo Park, Calif., Stanford Research Institute, WSL RM 66, 1961.

## ABSTRACT

Neutralization fire is fire which seeks to negat the enemy ability to fire, though at the same time seeking to inflict maximum casualties; primarily it aims at "keeping enemy heads down," for the purpose of maneuver. Research has been done on the lethal area of weapons. This study was a psychological study of the ability of a weapon to "keep heads down" at distances greater than the lethal area. The method used was a questionnaire given to combat experienced men as to what distances from them a shell barrage would keep them from using their weapons. The estimates are made under various hypothetical conditions.

AUTHOR: Mullin, Charles A., Jr. CODE: 1.32

TITLE: Acute Anxiety Reaction Versus "Blast Concussion"

SOURCE: U. S. Armed Forces Medical Journal, Vol. 4, 1953

## ABSTRACT

Of 115 consecutive patients bearing a diagnosis of blast concussion (cerebral), admitted to a forward medical company in Korea, 105 appeared to be suffering mainly from a form of acute anxiety. The evidence presented indicates that the acute syndrome, resulting from exposure to a nearby explosion, is usually best understood as a psychologic reaction to overwhelming "threat" rather than as the primary consequence of brain injury.

AUTHOR: Nordlie, P. G. and Popper, R. D. CODE: 1.33

TITLE: Social Phenomena in a Post-Nuclear Attack Situation - Synopses of Likely Social Effects of the Physical Damage

SOURCE: Human Sciences Research, Inc., 1961

## ABSTRACT

One of a series of reports prepared on a research program being conducted for the Behavioral Sciences Division of the Air Force Office of Scientific Research by Human Sciences Research, Inc. Ultimate objective: to develop a means of forecasting the response of society to a nuclear attack. Purpose of this report to investigate effects of attack on behavior and to consider how such effects would be related to recovery of society. Much material relevant to civil defense.

AUTHOR: Operations Research Office CODE: 1.34

TITLE: An Evaluation of Psywar Influence on Chinese Communist Troops

SOURCE: The Johns Hopkins University, ORO-T-16 (FEC)

## ABSTRACT

Interviews showed that UN aircraft were feared more than artillery, though the latter was believed to have killed more troops. Mainly concerned with propaganda, etc.

AUTHOR: Operations Research Office CODE: 1.35

TITLE: A Study of Combat Stress, Korea 1952

SOURCE: Chevy Chase, Md.: Johns Hopkins University
Technical Memo ORO-T-41(FEC)

ABSTRACT

This report is concerned primarily with the physiological aspects of psychological stress. Attempts to measure psychological effects of combat were unsuccessful. The interviewing contacts afforded opportunities to make direct observation of causes of psychological upset and found the most important ones to be: (1) fear of physical injury; (2) unpleasant effect associated with physical discomforts of battle; (3) empathy among unit members; (4) fear of social and/or official disapproval; (5) fear of damage to self-picture.

AUTHOR: Operations Research Office CODE: 1.36

TITLE: A Study of the Effectiveness of Air Support Operations in Korea

SOURCE: Chevy Chase, Md.: Johns Hopkins University, ORO-T-13, (FEC) 1951

## ABSTRACT

The problem was to estimate the effectiveness of air support operations in Korea against pe sonnel-type targets. The data was obtained in the interrogation of POW's.

Three types of airplanes - propeller fighters, jet fighters, and light bombers, and four types of weapons - guns (strafing), bombs, rockets, and napalm - are considered.

A mathematical model is evolved and statistical analysis is applied to the data and thus the expected effectiveness for each airplane-weapon combination, within the confidence interval of $.75 < \mu < .95$, is shown. This analysis gives the probability of troops being killed in action or wounded in action in target areas as large as company-size or battalion-sized units.

In the Appendix is included a North Korean and Chinese POW questionnaire on reactions to air attacks. This particular POW stated that artillery was the most frightening enemy weapon because of its rapidity with the airplanes, particularly the strafing, the second most frightening weapon. He stated the unit worried much about air attacks when marching, especially when it was moonlight or when snow was on the ground. He also expressed the marching unit was afraid of flares because they could be located by their use and then experienced fear of a possible air attack.

AUTHOR: Operations Research Office CODE: 1.37

TITLE: Fatigue and Stress Symposium

SOURCE: Chevy Chase, Md.: Johns Hopkins University, 1952

## ABSTRACT

In taking Hill 440 in Korea, Love Company (27th Infantry) made one of the most successful operations of the campaign. The men were in good physical condition and the point of engagement was only 1100 yards from point of assembly. Fire engagement began at 8:30 a.m. and was continuous until 5:00 p.m. From 11:30 on, the company leaders reported their greatest difficulty during the hours of afternoon crisis as being the problem of keeping the fighting men awake. This was in broad daylight under intense mortar and bullet fire. "Men who are in the act of fighting will fall asleep, even though falling asleep increases their danger.

During World War I, regiment marched eleven miles toward moderately quiet front at night while observing pyrotechnics at the front and arrived there totally exhausted. After five weeks of steady fighting, same troops marched 32 miles away from front with no resultant fatigue.

At Omaha Beach, M Company made the deepest penetration under its own power. Interviewed men said that at landing time they believed themselves to be at peak fitness. Yet a big sergeant said that upon disembarking he could not even walk under a machine gun's weight when normally he could run with it. He had to lie down and crawl with it, which required 20 minutes for 300 yards of beach.

When men are totally exhausted, they cannot be forced to dig entrenchments or do anything else. They are useless.

AUTHOR: Personnel Research Section CODE: 1.38

TITLE: A Survey of Opinions of Officers and Senior NCO's in Korea II. Factors Contributing to Unauthorized Withdrawal by Enlisted Men

SOURCE: Dept. of Army, Personnel Research and Procedures Branch, The Adjutant General's Office, PRS Report 950, 1952

## ABSTRACT

A total of 65 combat commanders of various grades, who were at the time engaged in combat in Korea, were given an unstructured paper and pencil interview on factors contributing to unauthorized withdrawal. Facotrs mentioned fell within six subject matter areas: (1) inadequacy of small unit leadership, (2) lack of preparation for the immediate combat task, (3) lack of preparation for combat in general, (4) combat crisis beyond immediate control, (5) fear that necessary support by other elements is lacking, and (6) low morale or unmilitary attitudes.

Limited value because it does not deal directly with possible effects of weapons in producing unauthorized withdrawal.

AUTHOR: Quarantelli, E. CODE: 1.39

TITLE: The Behavior of Panic Participants

SOURCE: Journal of Sociology and Social Research, 41, pp. 187-194, 1957

## ABSTRACT

The author states his conception of the word "panic" and presents some general observations based on field data, interviews after the situation, concerning certain aspects of this form of collective behavior. (NORC disaster team interviews of 1,000 persons involved in a number of community-wide disasters.)

He states seven propositions or hypotheses as aspects of panic behavior. The seven propositions represent an attempt to illustrate this theory - that a once socialized person even under extreme stress does not regress to the "brute levels" but rather shifts to an individualistic solution of the crisis while continuing to use socially learned modes of responses in the process.

AUTHOR: Quarentelli, E. L. CODE: 1.40

TITLE: The Nature and Conditions of Panic

SOURCE: American Journal of Sociology, 60, pp. 267-275, 1954


## ABSTRACT

Current conceptions of the nature and conditions of panic are inadequate and lack an empirical basis. Using data gathered by the Disaster Team of the National Opinion Research Center and other documentary sources, a comparative and analytical examination of specific instances of the behavior is made. A conception is developed of panic as the very antithesis of organized group activity - as an acute fear reaction marked by loss of self-control which is followed by nonsocial and nonrational flight. Such behavior arises upon a definition of possible entrapment, a perception of collective powerlessness, and a feeling of individual isolation in a crisis.

AUTHOR: Rennie, T. A. C. CODE: 1.41

TITLE: Psychological Aspects of Chemical Warfare

SOURCE: Publ. Josiah Macy Jr. Foundation, 1943

## ABSTRACT

A review of the literature shows that fewer physical disabilities are produced by chemical warfare agents than by other weapons. The psychiatric disabilities are far more common.

AUTHOR: Report of the General Board United States Forces

CODE: 1.42

TITLE: Combat Fatigue

SOURCE: European Theater, Medical Section, 1946

## ABSTRACT

This 13 page paper contains observations on the phenomenon of "combat exhaustion". This is particularly true of Chapter 1, "Definition and Factors which influenced the incidences of combat exhaustion in the European Theater". Other Chapters are devoted to prevention and treatment.

Combat exhaustion has been defined as "The disorganization of the cohesive forces constituting the normal individual, produced by the stress of war, and resulting in an ineffective combat soldier." The incidence and severity of the condition are influenced by the social and psychological background of the individual, and his military training and experiences, combined with the effects of fatigue, hunger, fear and environment. There are two types. The first occurs in new troops before combat or in the first five days of combat. The second occurs in the experienced battle-tested veterans, and usually begins to show up after around 4 months of combat. There are more cases of the first type, but the second type is the more serious. There are intermediate stages between these two types. Persons wounded and returned to combat are particularly prone. Other cases have resulted from intense artillery or aerial bombardment even though the bombardment may have only lasted for a few hours.

AUTHOR: Rioch, David M. CODE: 1.43

TITLE: Report on Temporary Duty in Japan and Korea

SOURCE: Army Medical Service Graduate School, Walter Reed Army Medical Center, Neuropsychiatry Division, Washington, D. C., 1953

ABSTRACT

Appendix A contain two "Outlines of Current Research Projects" (1953), which, if the results can be found, may be of interest. They were (1) "Analysis of Statistical Data". This is a correlational study, some of the variables are: number of contacts with the enemy, Enemy sounds received, Battle casualties, NP casualties, Non-battle casualties, Length of time position held, etc. (2) "Case History Study of NP Casualties". Purpose: to determine the sequence of events - tactical, environmental and interpersonal - which lead to the precipitation of neuropsychiatric disorder in one or more members of a unit.

AUTHOR: Ronson, Stephen W. CODE: 1.44

TITLE: Psychiatric Treatment in Combat Areas

SOURCE: U. S. Armed Forces Medical Journal,
Vol. 1, 1950

## ABSTRACT

Refers to lessons learned in World War II for treatment in Korea of psychiatric casualties. "The clinical course and prognosis of the combat neuroses are greatly influenced by group and social mechanisms." Basically, it calls for treatment as far forward as possible. It calls for (a) preservation of the patient's identification with the combat group; (b) minimization of the secondary gain of neurotic illness and (c) avoidance of suggestion of illness and disability. Therapeutic principles were implemented by group manipulation.

This article describes the single channel for evacuation of combat neuro-psychiatric cases which insures centralized and positive control of screening, treatment, and evacuation. Emphasis was placed on preservation of medical discipline, shortening of the period of hospitalization, avoidance of unnecessary hospital atmosphere, and promotion in the patient of the expectation of return to full duty.

General treatment within the combat unit, at Battalion Air Station level, at Division Clearing Station and Army Neuropsychiatric Treatment Station level is described. There is also a short summary of the results of forward area treatment and evaluation of statistics. Follow-up studies are indicated and referred to.

AUTHOR: Ronson, Stephen W. CODE: 1.45

TITLE: The Normal Battle Reaction: Its Relation to the Pathologic Battle Reaction

SOURCE: Bulletin of U. S. Army Medical Dept., Vol. 9, Supplement Issue, 1949

## ABSTRACT

"Despite the unpleasant nature of many reactions to combat, soldiers whose responses are within normal limits must be subjected to normal military demands."

This article discusses reactions, under varying conditions, to the stresses of combat. It suggests that some psychosomatic responses such as muscular tension and its extension in shaking and tremor, excessive perspiration, nausea, mild diarrhea, tachycardia and similar reactions are normal and should be expected. Only where these symptoms result in incapacitation should they be considered abnormal. Proper training and experience are shown to be factors in keeping these responses within normal limits.

Normal combat fear is broken down into three manifest components and related to normal reaction.

AUTHOR: Rylander, Costa (Prof.) and Thord, Ake (Capt.) CODE: 1.46

TITLE: War Neurosis and the Psychic Effects of Modern Weapons (Swedish translation)

SOURCE: Ft. Leavenworth, Kansas, U. S. Army Command & General Staff College

## ABSTRACT

This paper appears to be one of the best available on War Neurosis, their precipitating causes, their classification and treatment. Chapters of particular interest are: (a) The Importance of "War Neurosis." It is estimated that deducting the number killed, about 20% of the remaining losses in the U. S. Army of World War II were due to pathological psychic conditions. (b) The psychic effects of the different weapons: mortar, artillery, tanks, dive bombers. These weapons have different fear producing characteristics, sounds, etc. Individual soldiers will react differently due to past experience or inexperience, and the same soldiers will react differently according to the cover he has and whether he is active or not. Especially great psychic effects are observed when the soldier is forced to be in the utmost danger while inactive. (c) Fear, terror, and anxiety. (d) Normal and pathological reactions to combat; "If a man is left in combat long enough he will either be dead, wounded, or psychically sick." (e) Panic; in pre 20th century wars panic was common, but in modern wars panic seldom occurs due to dispersal of troops.

This paper has 243 reference., ma-y of which are in English.

AUTHOR: Shaffer, Laurance F. CODE: 1.47

TITLE: Fear and Courage in Aerial Combat

SOURCE: Journal Consult. Psychol., 1947

ABSTRACT

This study reports an interrogation of 4504 fliers who had just returned from combat. An anonymous questionnaire of 159 multiple choice items was used. The data support the hypothesis that "the adequate stimulus for fear is a highly motivated situation toward which the individual has no adequate means of adjustment." Other aspects of fear are discussed.

AUTHOR: Stouffer, S., et al. CODE: 1.48

TITLE: Studies in Social Psychology in World War II Vol. 2 - The American Soldier: Combat and Its Aftermath

SOURCE: Princeton, N. J.: Princeton Univ. Press, 1949

## ABSTRACT

Contains report of a survey on what German weapons were considered most frightening by combat troops. General report of the work of social psychologist in World War II. Contains studies of soldiers adjustment to all phases of army life. Of particular interest are the results of opinion surveys, etc., on combat experiences and fears found in Vol. 2.

AUTHOR: Swank, R. L. CODE: 1.49

TITLE: Combat Exhaustion: Descriptive and Statistical Analysis of Causes, Symptons and Signs

SOURCE: Journal of Nervous and Mental Disorders, Vol. 109, 1949

## ABSTRACT

This report discusses the nature of the psychiatric disabilities precipitated in combat, their pathogenesis, psychodynamics, natural history and treatment and prevention. The method of study involved comparison of patients and men of comparable combat experience not psychiatrically disabled. It was made by five psychiatrists who attempt to present a comprehensive formulation of the psychodynamic principles involved.

The symptoms and signs of combat exhaustion are described and statistically analyzed. Combat exhaustion develops only after long and severe combat, the symptoms and sequence of development are stereotyped, and they are not materially altered by the presence of pre-combat neurotic traits. There appeared to be a relationship between the time of onset of combat in exhaustion and the total casualties suffered. Further, it was felt that the emotional tension built up from sustained and complete alertness was a more fundamental cause of combat exhaustion than the fear of death or mutilation.

AUTHOR: Taylor, Jean G. CODE: 1.50

TITLE: Symposium on the Role of Stress in Military Operations 1 - 2 May 1953

SOURCE: The Johns Hopkins University, Operations Research Office, ORO-T-256

## ABSTRACT

Physiological measurements of stress were accentuated; however, psychological factors which impair the fighting ability of American troops were also of concern. Psychological data were limited to situational observations of troops in action. Conversational statements of desirable goals of study given as: (1) ability to pre-rate quality of given fighting man; (2) ability to influence morale of combatants before action and during action.

AUTHOR: The U. S. Strategic Bombing Survey, Morale Division

CODE: 1.51

TITLE: The Effects of Strategic Bombing on German Morale. Vols. I and II

SOURCE: Washington, D. C.: U. S. Government Printing Office, 1947

## ABSTRACT

The United States Strategic Bombing Survey group in Germany followed closely behind the advance of the Allied armies. They attempted to assess all aspects of the effects of strategic bombing from physical damage to psychological effects. Objective of the Morale Division, "To determine the direct and indirect effects of bombing upon the attitudes, behavior and health of the civilian population." A first approach was to study estimates of morale based on interviews with 3,700 German civilians. This was the most accurate and dependable body of data that was obtained. Another approach was a study of morale as reflected in official German documents and selected interrogations. The investigators state, "Germany was scoured for its war records which were found sometimes, but rarely, in places where they ought to have been." German authorities maintained an extensive "home front intelligence service." However, they are of limited value because modern scientific methods of assessing public opinion were not used. The "morale reports" reflect the official German picture of morale. Other official records such as reports of industrial absenteeism and tabulations of Gestapo arrests were analyzed as possible indicants of morale.

Vol. II contains several supplementary studies of the morale effect of strategic bombing. Two studies were made using captured German mail as a source of data. Correlations and percentage tabulations were run on amount of bomb exposure and level of morale, etc. Another study was made by way of a questionnaire to French, Italian, and Russian conscripted workers who were in Germany during the war, which served as a check on the German civilian questionnaire. Another study was, "The effects of allied air attack on the morale of the German land armies."

AUTHOR: The U. S. Strategic Bombing Survey, Morale Division

CODE: 1.52

TITLE: The Effects of Strategic Bombing on Japanese Morale

SOURCE: Washington, D. C.: U. S. Government Printing Office, 1947

## ABSTRACT

The United States Strategic Bombing Survey in Japan made a cross-section interview survey of Japanese civilians, interrogated officials, and analyzed recovered Japanese documents.

The overall effects of the air attacks on morale were: (1) the most important single factor in causing the Japanese people to have doubts of victory, (2) the most important single factor in causing them to feel certain of defeat, (3) and in making them unwilling to continue the war, (4) they were the greatest worry during the war, and the thing that made most of the people happy that the war was over, (5) strategic bombing produced great social and psychological disruption and contributed to securing surrender prior to the planned land invasion. Fear of the consequences of defeat and faith in the Emperor were among factors which supported morale. Results of the investigation are presented in verbal, graphic and tabular form.

When the amount of direct bombing experience is compared with reported morale level there is a small but consistent difference between bombed persons and unbombed persons. Conclusion was that the bombing effected morale of all persons with the persons actually bombed being more effected. There was no evidence that the experience of being bombed ever raised the fighting morale of the people.

AUTHOR: Van De Water, Marjorie CODE: 1.53

TITLE: The Human Price of Combat

SOURCE: U. S. Army Combat Forces Journal, 1954


## ABSTRACT

Briefly summarized are some findings by a team of 13 investigators that spent 7 weeks studying soldiers in the combat area in Korea. "The strain of combat is an individual matter." Striking findings from the blood studies was a great shortage of white blood cells. Men in combat sweat profusedly, urinate frequently. Yet in spite of losing water they do not drink. It takes 5 to 12 days -- to recover from combat strain.

AUTHOR: Vaughan, W. S. and Walker, Peyton G. CODE: 1.54

TITLE: Psychological Effect of Patterns of Small Arms Fire

SOURCE: Psychological Research Associates, PRA Report 57-16, 1957

## ABSTRACT

This study attempts to determine the most effective type of offensive weapon fire. Light Machine Gun, Automatic Rifle, and M1 Rifle were compared in various categories of performance specification as to their ability to neutralize and destroy the enemy.

Implications:

(1). Maximum psychological effect can be achieved at a minimal ammunition expense by firing repeated short bursts.

(2). A random pattern of fire produces as much psychological effect as a systematic pattern and kills more targets.

Recommends further study to obtain psychological criteria for designing weapons and combat tactics.

AUTHOR: Vaughan, W. S., Jr. and Walker, P. G. CODE: 1.55

TITLE: Psychological Effects of Platoon Weapons: A Questionnaire Study (Research Study Report IV)

SOURCE: Psychological Research Associates, 1957

## ABSTRACT

Fifty combat veterans were administered a 2 hour questionnaire on the relative "dangerousness" of 6 platoon weapons under conditions of assaulting or defending. Weapons assessed were: (1) M1 Rifle, (2) BAR, (3) light maching gun (LMG), (4) 60 mm Mortar, (5) Hand Grenade, (6) 57 mm recoilless rifle. All six weapons were compared individually while the first four listed were compared in various numbers and combinations. Example Results: Mortar judged most dangerous weapon in defending position, while in assaulting the LMG and BAR are considered more dangerous than mortar. The M1 in both instances is considered least dangerous. Extensive graphic and tabular presentation. Questionnaire is presented in the Appendices.

AUTHOR: Vernon, P. E. CODE: 1.56

TITLE: Psychological Effects of Air Raids

SOURCE: Journal of Abnormal and Social Psychology, 36, pp. 457-476, 1941

## ABSTRACT

The author wrote from England during the air raids. Data was collected from 50 observers (psychologists and/or medical doctors). The data confirms newspaper accounts of the time on the imperturbability of the majority of the population. Acclimatization even to heavy raids at night was remarkable. This was contrary to preraid speculation as to the possibility of widespread panic and hysteria. Being with others helped the majority of people, and those who lived alone tended to find raids more trying.

Introspective accounts of what it feels like when bombs fall close were judged to be difficult to obtain and often contradictory. In general the psychological disorders (neurosis, etc.) attributable to raids were considerably less serious than the social disorganization consequent on the distruction of so many homes, etc.

At first the sound of a siren was enough to send many to shelter. Later a kind of adaptation took place. People whose houses were demolished, etc., showed more nervousness during the next few raids. A reversion occurred also when there was a long spell of immunity from raids. Chief psychological outlets from stress of raids were presence of a group and activity.

Some reactions to raids other than neurosis, panic, etc., were irritability, irrational thinking, exaggerated accounts of raids; in addition it appeared that children and young people adapted better than the older people. A strong positive social attitude was developed among the people. There seems to exist an innate tendency for danger and noise to evoke fear and anxiety; actually the primary stimulus would seem to be strangeness. Apparently this tendency is far more susceptible to control by social attitudes, by suggestion, and more readily adapted than was supposed.

AUTHOR: Whittenburg, J. A. and Whitehouse, J. M. CODE: 1.57

TITLE: Psychological Effects of Small Arms Fire on Combat Experienced and Non-Experienced Infantrymen

## ABSTRACT

Contains full definition of testing situation and criteria. Two groups (15 each) experienced and inexperienced combat troops were placed down-range from automatic rifle and Ml rifle fire anu asked to compare effectiveness of the two weapons and rate amount of action possible against each.

AR was judged most effective by both groups for all categories of equal distance and volume of fire. Psychological effectiveness of both weapons is a function of the volume of fire, nearness of fire, and combat experience.

AUTHOR: Woltman, A. G. CODE: 1.58

TITLE: Life on a Target

SOURCE: American Journal of Orthopsychiatry, Vol. 15, 1945

## ABSTRACT

A descriptive article, written in the first person, about the reactions of a group of American soldiers to bombing in England. It indicates some of the adjustment processes used to overcome fear and anxiety. It is based on the observations of the author, open discussion, and use of himself as a guinea pig.

The article suggests an initial difference in attitude of the Americans and the English due to the relative experience to bombing. The difference disappears as experience is acquired. It brings out a need for human companionship, difficulty of going to sleep at night, and some physical manifestations of the strain. It covers personal experiences of a period of some eighty days that were followed by a return to more normal conditions as defensive and offensive measures began to restrict the enemy. It does not indicate any inability to perform the requirements of the duty situation due to bombing but infers that routine functions went on despite the discomforts.

AUTHOR: Yarnold, K. W. CODE: 1.59

TITLE: Lessons On Morale To Be Drawn From Effects of Strategic Bombing On Germany

SOURCE: The Johns Hopkins University, Operations Research Office, ORO-T-2, Oct. 4, 1949

## ABSTRACT

The data for this paper was taken from the United States Strategic Bombing Survey Reports of the morale division, "The Effects of Strategic Bombing on German Morale," Vols. I and II. The author states that this report is a commentary and should ideally be read in conjunction with the United States Strategic Bombing Survey reports.

Data in the United States Strategic Bombing Survey report on the relation of bomb tonage to morale is reanalyzed using a more sensitive measure; i.e. "tons per inhabitant" rather than "tons per city." Interestingly the relationship between morale and bomb tonage thus becomes a linear relationship.

The problem of the report - would general civilian morale be a useful target for psychological warfare. Conclusions - Strategic bombing had a definite effect on civilian morale, probably more than could be achieved by psychological warfare. However, the morale effect alone on actual behavior was such as to be insignificant in its effects on war production. Therefore, it is believed that it is of little value to aim propaganda offensives at "general morale."

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